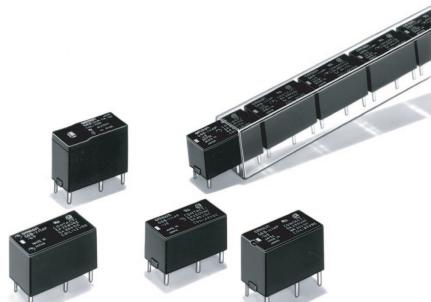


Sub-miniature Relay that Switches up to 5 A

- Sub-miniature: 20 x 10 x 10 mm (L x W x H).
- Low power consumption: 200 mW.
- Unique moving loop armature reduces relay size, magnetic interference, and contact bounce time.
- Single- and double-winding latching types also available.



Ordering Information

Classification	Contact form	Straight PCB	Self-clinching PCB
Single-side stable	SPST-NO	G6B-1114P-US	G6B-1114C-US
	SPST-NO+SPST-NC	G6B-2114P-US	G6B-2114C-US
	DPST-NO	G6B-2214P-US	G6B-2214C-US
	DPST-NC	G6B-2014P-US	G6B-2014C-US
Single-winding latching	SPST-NO	G6BU-1114P-US	G6BU-1114C-US
Double-winding latching	SPST-NO	G6BK-1114P-US	G6BK-1114C-US
High-capacity single-side stable	SPST-NO	G6B-1174P-US	G6B-1174C-US

Note: When ordering, add the rated coil voltage to the model number.

Example: G6B-1114P-US 12 VDC

_____ Rated coil voltage

Model Number Legend

G6B 1 - 2 3 4 5 6 7 **VDC**

- 1. Relay Function**
 - None: Single-side stable
 - U: Single-winding latching
 - K: Double-winding latching
- 2. Contact Form**
 - 21: SPST-NO + SPST-NC
 - 22: DPST-NO
 - 20: DPST-NC
 - 11: SPST-NO
- 3. Contact Type**
 - 1: Standard
 - 7: High-capacity
- 4. Enclosure Ratings**
 - 4: Fully sealed
- 5. Terminals**
 - P: Straight PCB
 - C: Self-clinching PCB
- 6. Approved Standards**
 - US: UL/CSA certified
- 7. Rated Coil Voltage**
 - 5, 6, 12, 24 VDC

■ Accessories (Order Separately)

Back Connecting Sockets

Applicable relay	Back connecting socket*
G6B(U)-1114P-US	P6B-04P
G6BK-1114P-US	P6B-06P
G6B-2114P-US	P6B-26P
G6B-1174P-US	P6B-04P

*Not applicable to the self-clinching type.

Removal Tool	P6B-Y1
Hold-down Clips	P6B-C2

Specifications

■ Coil Ratings

Single-side Stable Type

Item	SPST-NO					SPST-NO + SPST-NC, DPST-NO, DPST-NC				
Rated voltage	3 VDC	5 VDC	6 VDC	12 VDC	24 VDC	3 VDC	5 VDC	6 VDC	12 VDC	24 VDC
Rated current	67 mA	40 mA	33.3 mA	16.7 mA	8.3 mA	100 mA	60 mA	50 mA	25 mA	12.5 mA
Coil resistance	45 Ω	125 Ω	180 Ω	720 Ω	2,880 Ω	30 Ω	83.3 Ω	120 Ω	480 Ω	1,920 Ω
Coil inductance	Armature OFF	0.20	0.28	0.31	1.2	4.9	—	—	—	—
(H) (ref. value)	Armature ON	0.18	0.26	0.28	1.1	4.1	—	—	—	—
Must operate voltage	70% max. of rated voltage					80% max. of rated voltage				
Must release voltage	10% min. of rated voltage									
Max. voltage	160% of rated voltage (at 23°C)					140% of rated voltage (at 23°C)				
Power consumption	Approx. 200 mW					Approx. 300 mW				

Single-winding Latching Type

Rated voltage	3 VDC	5 VDC	6 VDC	12 VDC	24 VDC
Rated current	67 mA	40 mA	33.3 mA	16.7 mA	8.3 mA
Coil resistance	45 Ω	125 Ω	180 Ω	720 Ω	2,880 Ω
Coil inductance	Armature OFF	0.20	0.28	0.31	1.2
(H) (ref. value)	Armature ON	0.18	0.26	0.28	1.1
Must operate voltage	70% max. of rated voltage				
Must release voltage	70% min. of rated voltage				
Max. voltage	160% of rated voltage (at 23°C)				
Power consumption	Approx. 200 mW				

Double-winding Latching Type

Rated voltage	3 VDC	5 VDC	6 VDC	12 VDC	24 VDC
Set coil	Rated current	93.2 mA	56 mA	46.8 mA	23.3 mA
	Coil resistance	32.2 Ω	89.2 Ω	128.5 Ω	515 Ω
	Coil inductance	Armature OFF	0.11	0.15	0.18
	(H) (ref. value)	Armature ON	0.11	0.15	0.18
Reset coil	Rated current	93.2 mA	56 mA	46.8 mA	23.3 mA
	Coil resistance	32.2 Ω	89.2 Ω	128.5 Ω	515 Ω
	Coil inductance	Armature OFF	0.11	0.15	0.18
	(H) (ref. value)	Armature ON	0.11	0.15	0.18
Must set voltage	70% max. of rated voltage				
Must reset voltage	70% min. of rated voltage				
Max. voltage	130% of rated voltage (at 23°C)				
Power consumption	Set coil: Approx. 280 mW Reset coil: Approx. 280 mW				

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

2. Operating characteristics are measured at a coil temperature of 23°C.

■ Contact Ratings

Item	SPST-NO		SPST-NO + SPST-NC, DPST-NO, DPST-NC	
Load	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)
Rated load	5 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 2 A at 30 VDC	5 A at 250 VAC; 5 A at 30 VDC	1.5 A at 250 VAC; 1.5 A at 30 VDC
Contact material	AgCdO (Cd free planned 1 Apr 05)			
Rated carry current	5 A			
Max. switching voltage	380 VAC, 125 VDC			
Max. switching current	5 A			
Max. switching power	1,250 VA, 150 W	500 VA, 60 W	1,250 VA, 150 W	375 VA, 80 W
Failure rate (reference value)	10 mA at 5 VDC			

Item	SPST-NO (High-capacity)	
Load	Resistive load ($\cos\phi = 1$)	Inductive load ($\cos\phi = 0.4$; L/R = 7 ms)
Rated load	8 A at 250 VAC; 5 A at 30 VDC	2 A at 250 VAC; 2 A at 30 VDC
Contact material	AgCdO	
Rated carry current	8 A	
Max. switching voltage	380 VAC, 125 VDC	
Max. switching current	8 A	
Max. switching power	2,000 VA, 150 W	
Failure rate (reference value)	10 mA at 5 VDC	

Note: P level: $\lambda_{60} = 0.1 \times 10^{-6}$ /operation

■ Characteristics

Contact resistance	30 mΩ max.
Operate (set) time	10 ms max. (mean value: 1-pole approx. 3 ms, 2-pole approx. 4 ms)
Release (reset) time	Single-side stable types: 10 ms max. (mean value: 1-pole approx. 1 ms, 2-pole approx. 2 ms) Latching types: 10 ms max. (mean value: approx. 3 ms)
Min. set/reset signal width	Latching type: 15 ms min. (at 23°C)
Max. operating frequency	Mechanical: 18,000 operations/hr Electrical: 1,800 operations/hr (under rated load)
Insulation resistance	1,000 MΩ min. (at 500 VDC, at 250 VDC between set coil and reset coil)
Dielectric strength	3,000 VAC (Latching types: 2,000 VAC), 50/60 Hz for 1 min between coil and contacts 1,000 VAC, 50/60 Hz for 1 min between contacts of same polarity 250 VAC, 50/60 Hz for 1 min between set and reset coils 2,000 VAC, 50/60 Hz for 1 min between contacts of different polarity
Vibration resistance	Destruction: 10 to 55 to 10 Hz, 0.75mm single amplitude (1.5mm double amplitude) Malfunction: 10 to 55 to 10 Hz, 0.75mm single amplitude (1.5mm double amplitude)
Shock resistance	Destruction: 1,000 m/s ² Malfunction: Single-side stable: 100 m/s ² ; Latching: 300 m/s ²
Endurance	Mechanical: 50,000,000 operations min. (at 18,000 operations/hr) Electrical: 100,000 operation min. (at 1,800 operations/hr)
Ambient temperature	Operating: -25°C to 70°C (with no icing)
Ambient humidity	Operating: 5% to 85%
Weight	Double-winding latching: Approx. 3.7 g High-capacity: Approx. 4.6 g Double pole: Approx. 4.5 g Other: Approx. 3.5 g

Note: The data shown above are initial values.

■ Approved Standards

UL508 (File No. E41643)/CSA C22.2 No.14 (File No. LR31928)

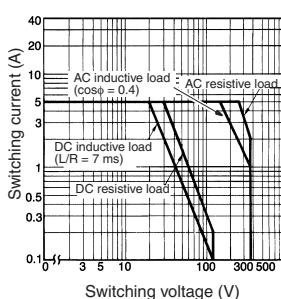
EN 61810-1 (VDE Reg No. 5361)/Connector EN 61984 (VDE Reg No. 125603)

Model	Contact form	Coil ratings	Contact ratings
G6B-1114P-US G6B-1114C-US G6BU-1114P-US G6BU-1114C-US G6BK-1114P-US G6BK-1114C-US	SPST-NO	3 to 24 VDC	5 A, 250 VAC (general use) 5 A, 30 VDC (resistive load)
G6B-1174P-US G6B-1174C-US			8 A, 250 VAC (general use) 8 A, 30 VDC (resistive load)
G6B-2114P-US G6B-2114C-US G6B-2214P-US G6B-2214C-US G6B-2014P-US G6B-2014C-US	SPST-NO + SPST-NC DPST-NO DPST-NC		5 A, 250 VAC (general use) 5 A, 30 VDC (resistive load)

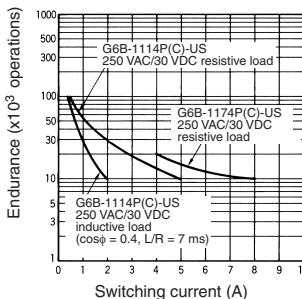
Engineering Data

G6B-1114P-US

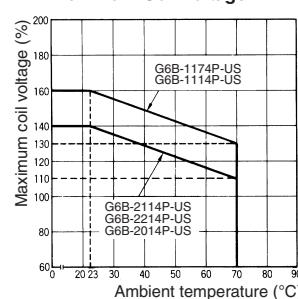
Maximum Switching Power



Endurance



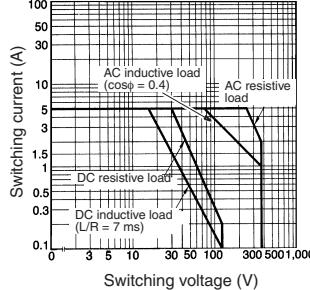
Ambient Temperature vs. Maximum Coil Voltage



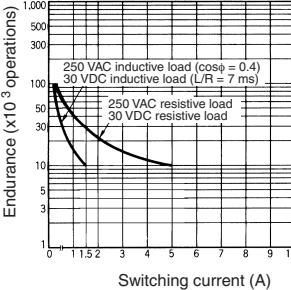
G6B-2114P-US, G6B-2214P-US

G6B-2014P-US

Maximum Switching Power



Endurance



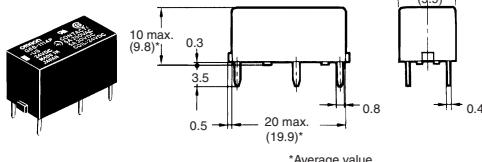
Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

Dimensions

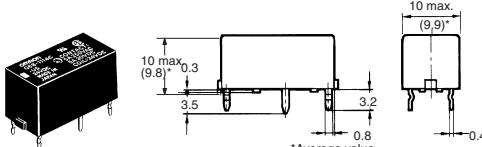
Note: 1. All units are in millimeters unless otherwise indicated.

2. Orientation marks are indicated as follows: 

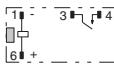
**G6B-1114P-US
G6BU-1114P-US**



**G6B-1114C-US
G6BU-1114C-US**

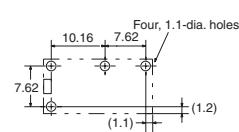


**Terminal Arrangement/Internal
Connections (Bottom View)
G6B-1114P, -1114C**

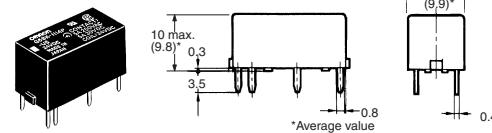


**Mounting Holes
(Bottom View)**

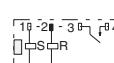
**G6B-1114P, -1114C
G6BU-1114P, -1114C**



G6BK-1114P-US

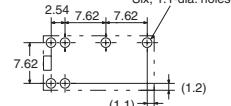


**Terminal Arrangement/Internal
Connections (Bottom View)
G6BK-1114P, -1114C**

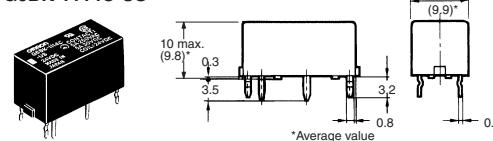


**Mounting Holes
(Bottom View)**

G6BK-1114P, -1114C



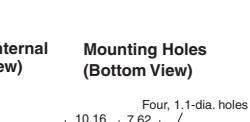
G6BK-1114C-US



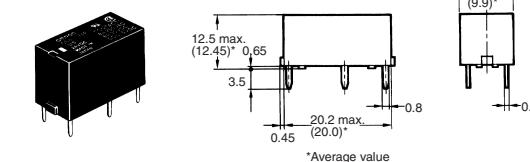
**Terminal Arrangement/Internal
Connections (Bottom View)
G6BK-1114P, -1114C**

**Mounting Holes
(Bottom View)**

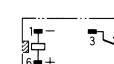
G6BK-1114C-US



G6B-1174P-US

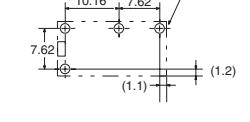


**Terminal Arrangement/Internal
Connections (Bottom View)
G6B-1174P, -1174C**

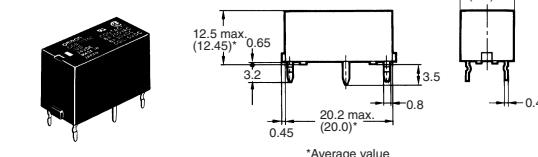


**Mounting Holes
(Bottom View)**

G6B-1174P, -1174C

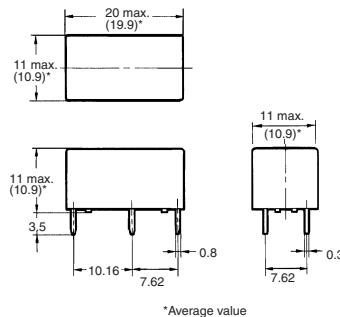


G6B-1174C-US



*Average value

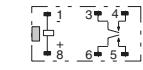
G6B-2114P-US
G6B-2214P-US
G6B-2014P-US



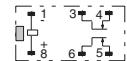
Terminal Arrangement/Internal Connections (Bottom View)



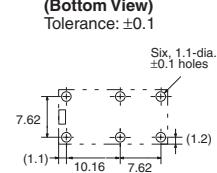
G6B-2214P-US



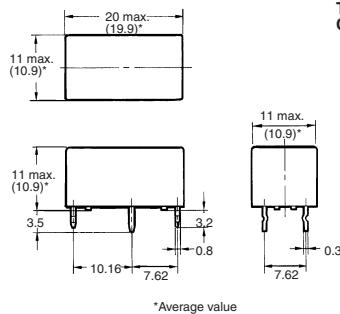
G6B-2014P-US



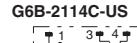
Mounting Holes (Bottom View)



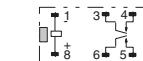
G6B-2114C-US
G6B-2214C-US
G6B-2014C-US



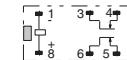
Terminal Arrangement/Internal Connections (Bottom View)



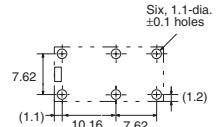
G6B-2214C-US



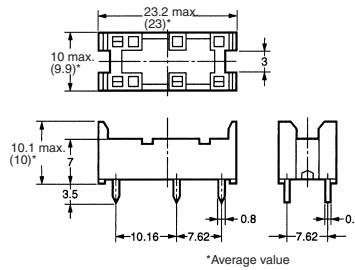
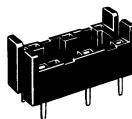
G6B-2014C-US



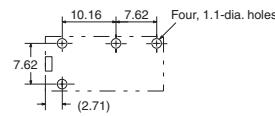
Mounting Holes (Bottom View)
 Tolerance: ± 0.1



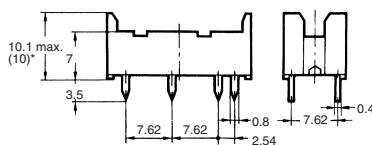
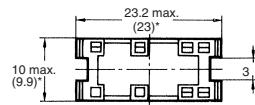
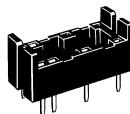
Back Connecting Socket
P6B-04P



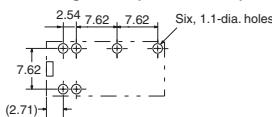
Mounting Holes (Bottom View)



P6B-06P

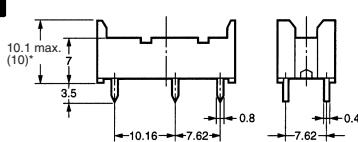
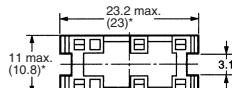
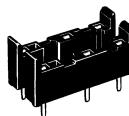


Mounting Holes (Bottom View)



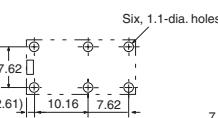
*Average value

P6B-26P



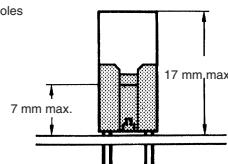
*Average value

Mounting Holes (Bottom View)

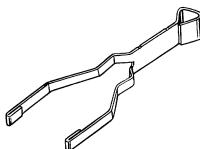


Note: Rated current of socket is 5 A max.

Mounting Height of Relay with Connecting Socket



Note: Height of G6B-1174P-US is 19.5 mm max.

Removal Tool
P6B-Y1Hold-down Clips
P6B-C2

Note: P6B-C2 Hold-down Clips cannot be used for G6B-1174P-US.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.